



UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office

NOTICE OF ALLOWANCE AND ISSUE FEE DUE

MM61/0603

WILLIAM F PRENDERGAST  
BRINKS HOFER GILSON & LIONE  
P O BOX 10395  
CHICAGO IL 60610

APPLICATION NO.	FILING DATE	TOTAL CLAIMS	EXAMINER AND GROUP ART UNIT	DATE MAILED
09/139,307	08/24/98	008	TRAN, H	2861 06/03/99
First Named Applicant	SHIRAKAWA, 35 USC 154(b) term ext. = 0 Days.			
TITLE OF INVENTION THERMAL HEAD				

ATTY'S DOCKET NO.	CLASS-SUBCLASS	BATCH NO.	APPLN. TYPE	SMALL ENTITY	FEE DUE	DATE DUE
2 9281/3130	347-200.000	T84	UTILITY	NO	\$1210.00	09/03/99

**THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED.**

**THE ISSUE FEE MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED.**

**HOW TO RESPOND TO THIS NOTICE:**

**I. Review the SMALL ENTITY status shown above.**

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

- A. If the status is changed, pay twice the amount of the FEE DUE shown above and notify the Patent and Trademark Office of the change in status, or
- B. If the status is the same, pay the FEE DUE shown above.

If the SMALL ENTITY is shown as NO:

- A. Pay FEE DUE shown above, or
- B. File verified statement of Small Entity Status before, or with, payment of 1/2 the FEE DUE shown above.

**II. Part B-Issue Fee Transmittal should be completed and returned to the Patent and Trademark Office (PTO) with your ISSUE FEE. Even if the ISSUE FEE has already been paid by charge to deposit account, Part B Issue Fee Transmittal should be completed and returned. If you are charging the ISSUE FEE to your deposit account, section "4b" of Part B-Issue Fee Transmittal should be completed and an extra copy of the form should be submitted.**

**III. All communications regarding this application must give application number and batch number. Please direct all communications prior to issuance to Box ISSUE FEE unless advised to the contrary.**

**IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.**

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Washington, D.C. 20231

APPLICATION NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.
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09/139,307 08/24/98 SHIRAKAWA

T 9281/3130

EXAMINER

MM61/0603

WILLIAM F PRENDERGAST  
BRINKS HOFER GILSON & LIONE  
P O BOX 10395  
CHICAGO IL 60610

TRAN, H  
ART UNIT PAPER NUMBER 4

2861  
DATE MAILED:

06/03/99

This is a communication from the examiner in charge of your application.  
COMMISSIONER OF PATENTS AND TRADEMARKS

**NOTICE OF ALLOWABILITY**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance and Issue Fee Due or other appropriate communication will be mailed in due course.

- ☐ This communication is responsive to \_\_\_\_\_
- ☒ The allowed claim(s) is/are 1-8
- ☐ The drawings filed on \_\_\_\_\_ are acceptable.
- ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- ☒ All ☐ Some ☐ None of the CERTIFIED copies of the priority documents have been received.
- ☒ received in Application No. (Series Code/Serial Number) 8/897,153
- ☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

- ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

A SHORTENED STATUTORY PERIOD FOR RESPONSE to comply with the requirements noted below is set to EXPIRE **THREE MONTHS** FROM THE "DATE MAILED" of this Office action. Failure to timely comply will result in ABANDONMENT of this application. Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

- ☐ Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL APPLICATION, PTO-152, which discloses that the oath or declaration is deficient. A SUBSTITUTE OATH OR DECLARATION IS REQUIRED.

- ☒ Applicant MUST submit NEW FORMAL DRAWINGS

- ☐ because the originally filed drawings were declared by applicant to be informal.

- ☒ including changes required by the Notice of Draftperson's Patent Drawing Review, PTO-948, attached hereto on Paper No. \_\_\_\_\_

- ☐ including changes required by the proposed drawing correction filed on \_\_\_\_\_, which has been approved by the examiner.

- ☐ including changes required by the attached Examiner's Amendment/Comment.

☒ including missing Figs. 7A, 7B.  
Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the reverse side of the drawings. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftperson.

- ☐ Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Any response to this letter should include, in the upper right hand corner, the APPLICATION NUMBER (SERIES CODE/SERIAL NUMBER). If applicant has received a Notice of Allowance and Issue Fee Due, the ISSUE BATCH NUMBER and DATE of the NOTICE OF ALLOWANCE should also be included.

**Attachment(s)**

- ☒ Notice of References Cited, PTO-892

- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_

- ☒ Notice of Draftperson's Patent Drawing Review, PTO-948

- ☐ Notice of Informal Patent Application, PTO-152

- ☐ Interview Summary, PTO-413

- ☐ Examiner's Amendment/Comment

- ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

- ☒ Examiner's Statement of Reasons for Allowance

*Huan Tran*

Huan Tran  
Primary Examiner

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### **DETAILED ACTION**

#### ***Priority***

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. 08/697,153, filed on 08/20/96.

#### ***Oath/Declaration***

2. Receipt is acknowledged of the executed Declaration and the appropriate filing fee.

#### ***Drawings***

3. The drawings are objected to because Figs. 7A and 7B are missing from the 5 sheets of drawings filed which include Figs. 1-5, 6A-6C, 8 and 9. Correction is required.

#### ***Allowable Subject Matter***

4. Claims 1-8 are allowed.

5. The following is an examiner's statement of reasons for allowance:

Prior art of record, in particular prior art to Shirakawa (US Patent No. 5,477,266) does not teach or suggest a second interlayer insulation layer comprised of insulating ceramic formed on the upper surface of the first interlayer insulation layer. Figs. 1-4 of Shirakawa shows a thermal head and a method of manufacturing, wherein an

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interlayer insulating layer 15 is formed by a thermal oxidizing treatment of the conductive layer 13.

Fuyama et al. (US Patent No. 4,617,575) discloses a thermal head having an interlayer insulating layer disposed between first and second conductors layers.

Saito (US Patent No. 4,451,835) discloses a thermal head having an extended common electrode layer 7 connected to a common electrode layer 11 through through hole 11.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Huan Tran whose telephone number is (703)308-0749.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist of the Technology Center whose telephone number is (703) 308-1782. The facsimile numbers for Technology Center 2800 are (703) 308-7722, (703) 308-7724, (703) 308-7382.



Huan H. Tran

Primary Examiner

Art Unit 2861

hht

June 2, 1999